NRC FORM 618
(8-2000)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

# CERTIFICATE OF COMPLIANCE
## FOR RADIOACTIVE MATERIAL PACKAGES

| 1 a CERTIFICATE NUMBER | b REVISION NUMBER | c DOCKET NUMBER | d PACKAGE IDENTIFICATION NUMBER | PAGE | PAGES |
|---|---|---|---|---|---|
| 9252 | 6 | 71-9252 | USA/9252/AF | 1 OF | 5 |

2. PREAMBLE

a This certificate is issued to certify that the package (packaging and contents) described in Item 5 below meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging and Transportation of Radioactive Material."

b This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported

3 THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a ISSUED TO *(Name and Address)*

AREVA NP, Inc
3315 Old Forest Road,
P.O. Box 10935
Lynchburg, VA 24506-0935

b TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

AREVA NP, Inc., consolidated application dated October 28, 2008, as supplemented

4 CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5

(a) Packaging

(1) Model No.: 51032-2

(2) Description

A steel shipping container for fuel bundles, consisting of a strong-back and fuel bundle clamping assembly, shock mounted to a steel outer container. Nine separator blocks, which are 6" x 8" x 8-1/2" long and have a 3/8" thick wall and a rectangular gusset plate welded inside, are bolted between fuel bundles. The outer container is composed of an 11 gauge steel shell approximately 43" diameter by 216" long. The maximum weight of the package, including contents, is 7,500 pounds.

(3) Drawings

The packaging is constructed and assembled in accordance with the following AREVA NP, Inc., Drawing Nos.: 02-1215926C-002; 02-1215929D-003; 02-1215930D-003; 02-1215931D-003; 02-1215932D-003; 02-1215933D-003; 02-1215934C-002; 02-1215935D-003; 02-1216010D-001.

5.(b) Contents

(1) Type and form of material

Unirradiated fuel assemblies, composed of uranium dioxide fuel pellets clad in zircaloy tubes. Uranium is enriched to a maximum of 5.0 weight percentage U-235 The fuel assemblies may contain inserted control rod assemblies The fuel assemblies have the following specifications:

| Type | 15x15 | 15x15 | 17x17 | 17x17 |
|---|---|---|---|---|
| Maximum Number of Fuel Rods Per Assembly | 208 | 204 | 264 | 264 |
| Minimum Number of Non-Fuel Rods Per Assembly | 17 | 21 | 25 | 25 |
| Nominal Rod Pitch (in.) | 0.568 | 0.563 | 0.501 | 0.496 |
| Maximum Pellet Diameter (in.) | 0.3742 | 0.3671 | 0.3252 | 0.3232 |
| Maximum Density of Active Fuel Stack Length (%TD) | 97.5 | 97.5 | 97.5 | 97.5 |
| Nominal Cladding Maximum OD (in.) | 0.430 | 0.422 | 0.379 | 0.374 |
| Nominal Cladding Minimum OD (in.) | 0.377 | 0.370 | 0.332 | 0.326 |
| Nominal Fuel Assembly Envelope (in.)* | 8.520 | 8.445 | 8.517 | 8.432 |
| Nominal Active Fuel Stack Length (in.) | 144 | 144 | 144 | 144 |

The nominal fuel assembly envelope is defined as the product of the nominal rod pitch and the number of rods per edge.

5.b(1)(continued)

| Type | W 15x15 | W 17x17 | GEN1 14x14, 15x15 16x16 | L1 15x15 | L2 15x15 | L4 17x17 |
|---|---|---|---|---|---|---|
| Maximum Number of Fuel Rods Per Assembly | 204 | 264 | 256 | 208 | 208 | 264 |
| Minimum Number of Non-Fuel Rods Per Assembly | 21 | 25 | 0 | 17 | 17 | 25 |
| Nominal Rod Pitch (in.) | 0.563 | 0.496 | 0.501-0.590 | 0.568 | 0.568 | 0.496 |
| Maximum Pellet Diameter (in.) | 0.384 | 0.334 | 0.454 | 0.3707 | 0.3742 | 0.3232 |
| Maximum Density of Active Fuel Stack Length (%TD) | 95.0 | 95.0 | 95.0 | 97.5 | 97.5 | 97.5 |
| Nominal Cladding Maximum OD (in ) | 0.430 | 0.380 | 0.500 | 0.430 | 0.430 | 0.374 |
| Nominal Cladding Minimum OD (in.) | 0.410 | 0.355 | 0.260 | n/a | n/a | n/a |
| Nominal Fuel Assembly Envelope (in.)* | 8.445 | 8.432 | 8.25 | 8.520 | 8.520 | 8.432 |
| Nominal Active Fuel Stack Length (in.) | 196 | 196 | 196 | 196 | 196 | 196 |
| Minimum Sum Clad Thickness and Pellet Clad gap (in.) | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 |

* The nominal fuel assembly envelope is defined as the product of the nominal rod pitch and the number of rods per edge.

5.(b)(continued)

(2) Maximum quantity of material per package

Two fuel assemblies. Total weight of fuel assemblies, including control rod assemblies, not to exceed 3300 pounds.

Maximum quantity of radioactive material within a package may not exceed a Type A quantity.

5 (c) Criticality Safety Index (CSI): 1.0

3. Each fuel assembly must be unsheathed or must be enclosed in an unsealed polyethylene sheath which will not extend beyond the ends of the fuel assemblies. The ends of the sheaths must not be folded or taped in any manner that would prevent the flow of liquids into or out of the sheathed fuel assemblies.

Hydrogenous shims are not permitted within the fuel assemblies.

In addition to the requirements of Subpart G of 10 CFR Part 71:

(a) The package shall be prepared for shipment and operated in accordance with Chapter 7.0 of the application.

(b) Each packaging shall be maintained in accordance with Section 8.2 of the application.

(c) Each packaging shall meet the acceptance tests in Section 8.1 of the application.

The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR 71.17.

) Transport by air of fissile material is not authorized.

Revision No. 5 of this certificate may be used until October 31, 2009.

Expiration date: October 31, 2013.

## REFERENCES

AREVA NP, Inc., consolidated application dated October 28, 2008

Supplement dated November 4, 2008

FOR THE U S NUCLEAR REGULATORY COMMISSION

Eric J. Benner, Chief
Licensing Branch
Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety
and Safeguards

ate: 12/3 , 2008

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

# SAFETY EVALUATION REPORT

Docket No. 71-9252
Model No. 51032-2 Package
Certificate of Compliance No 9252
Revision No. 6

## SUMMARY

By letter dated September 29, 2008, AREVA NP Inc., requested renewal of Certificate of Compliance No. 9252 for the Model No. 51032-2 package. By letter dated October 28, 2008, AREVA NP Inc., submitted a consolidated Safety Analysis Report (SAR) which was supplemented on November 4, 2008. AREVA NP Inc., did not request any changes to the package design, operating procedures, acceptance tests, or maintenance program of the package. AREVA NP Inc., requested that the types of fuel that were licensed for shipment in the Model No. 51032-1 package, Certificate of Compliance No. 6581, with an expiration date of October 1, 2008, be added as authorized contents for the Model No. 51032-2 package. The certificate has been renewed for an additional five year period.

## EVALUATION

By letter dated September 29, 2008, AREVA NP Inc., requested renewal of Certificate of Compliance No. 9252, for the Model No. 51032-2 package. AREVA NP Inc., requested that the types of fuel licensed for shipment in the Model No. 51032-1 package be added as authorized contents for the Model No. 51032-2 package. AREVA NP Inc., did not request any changes to the package design, operating procedures, acceptance tests, or maintenance program of the package. The staff reviewed the consolidated SAR submitted on October 28, 2008 and supplemented on November 4, 2008, in support of the renewal request and determined that the documentation was available and complete.

Based on the information provided in the SAR and verified by the staff's own confirmatory analyses, the staff concluded that the request for renewal of Certificate of Compliance No. 71-9252 for the Model No. 51032-2 package meets the acceptance criteria specified in NUREG-1609, Criticality section.

In addition, the staff concluded that the changes made in this renewal do not affect the criticality design features for the Model No. 52032-2 package, are in compliance with 10 CFR Part 71 and that the applicable design and acceptance criteria have been satisfied. In reaching this conclusion, the staff has considered the regulation itself, appropriate regulatory guides, applicable codes and standards, and accepted engineering practices.

Item No. 3(a) was modified to change the name and address of the Certificate of Compliance holder.

Item No. 3(b) was modified to identify the consolidated application submitted in support of this renewal.

Condition No. 5.(a)(3) was revised to include changes in the numbering of the drawings and new revisions to update requirements for repair, welding specifications, and continued use of the package with elimination of prior fabrication and product quality requirements.

Condition No. 5.(b)(1) was modified to replace the wording "maximum of 5.05 weight percentage U-235" with "maximum of 5.0 weight percentage U-235" and to include the specifications of some fuel assemblies previously authorized for transport in the Model No. 51032-1 package.

Condition No. 5.(b)(2) was modified to change the payload weight from 3400 pounds to 3300 pounds consistent with Section 2.0 of the consolidated application.

Condition No. 5.(c) was modified to replace the term Transport Index for Criticality Control with Criticality Safety Index (CSI) in accordance with 10 CFR 71.4 and 71.59, and to include a standardized CSI of 1.0 for all fuel designs

Condition No. 9 was modified to clarify that the package is approved for use under the general license provisions of 10 CFR 71.17. This change is due to a revision in the numbering of the sections in 10 CFR Part 71 that became effective on October 1, 2004 (69 FR 3698).

A new Condition No. 10 was added to clarify that fissile material is not authorized for air transport since the package was not evaluated per the requirements of 10 CFR 71.55(f).

A new Condition No. 11 was added that allows the previous revision of the certificate to be used for a period of approximately one year.

A new Condition No. 12 was added to replace Condition No. 10 in Revision No. 5 of the certificate and change the expiration date to October 31, 2013. As a consequence of the inclusion of the new Conditions No. 10 and No. 11, the previous Condition No.10 was renumbered No.12.

**CONCLUSION**

The certificate has been renewed for a five year term. These changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71

Issued with Certificate of Compliance No. 9252, Revision No. 6,
on December 3 , 2008.